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Prix des veaux d'engraissement selon le type génétique et établissement des prix des veaux au seuil de rentabilité

cover
The dots on the map represent Agriculture Canada research establishments.

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SUMMARY

The price for feeder calves in western Canada tends to be higher for some breed crosses than for others. The existence of a premium or discounted price can have a major impact on the returns to the cow-calf producer. This study analyzed the profitability of finishing specific breed cross steers to determine whether feeder calf price differences by breed cross of the calf are based on their profitability. The study used three-breed cross steers produced by mating Charolais (C), Simmental (S), Limousin (L), and Chianina (Chi) terminal sires to first-cross dams of Hereford-Angus and nine dam types produced by mating C, S, and L sires to Hereford, Angus, and Shorthorn cows. The cows were maintained and the calves raised at Brandon, Man.

The premiums and discounts across specific breed cross feeder calves were found to be based on the profitability of finishing the feeder calf. The difference in profitability among breed crosses was a direct result of the growth and feed conversion performance of the calf and the quality of the carcass produced. High gains on feed reduced the cost of gain, increasing the profitability of the calf. A carcass with a high dressing percent and grade was also more profitable. While the average calf of a specific breed cross may gain faster or have better carcasses than other breed crosses and be more profitable, producers should not rely on breed cross alone as an indicator of profitability.

INTRODUCTION

There are many factors that affect the profits from finished cattle. Prices for feeder calves, slaughter cattle and feed prices are the more notable factors. Management factors are also very important in determining profits. Management includes the program of feeding, medication, implanting, labour, the facilities, and bedding. All of these factors will influence the growth and profitability of the calf. A final factor that will influence profits is the breed, or breed cross, of the calf. Nonmanagement factors that will influence profits are subsidies and producer levies.

Cattle feeders consistently pay a premium for some breed cross calves indicating that these breed crosses may be more profitable to finish. In the summer of 1986, thirty-one livestock auction market managers in western Canada were contacted to determine if the price for calves of similar size differed by breed cross in their market. They indicated that within the parkland region of western Canada, foreign breed cross calves of similar weight, 200-275 kg (440-605 lb), sell at a premium to straight British breed crosses. The premiums for foreign X British crosses over straight British crosses for steers were $10.58/100 kg ($4.80/cwt) for Charolais crosses, $9.92/100 kg ($4.50/cwt) for Limousin crosses, and $4.41/100 kg ($2.00/cwt) for Simmental crosses. In the prairie region of southwestern Saskatchewan and southeastern Alberta, Simmental crosses were discounted $8.38/100 kg ($3.80/cwt) and the premium for Charolais and Limousin crosses were similar to those in the parkland region. The major reason stated for the different prices was grade related. It was indicated that many Simmental crosses had to be fed to high weights for A1 or A2 grades. The straight British crosses received a lower price because of lower rates of gain and a greater likelihood of over finishing at the desired finish weight. In November and December of 1987, 17 feedlot managers and order buyers from western and eastern Canada were contacted to determine if they had breed preferences and what premiums they paid. Most indicated a breed cross preference, or did not want certain breed crosses for their feedlot and would pay premiums similar to and often greater than those indicated above. Most of the feedlots fed a silage-grain diet and few would feed high percentage Simmentals. It was indicated that high percentage Simmentals had to be fed differently to get top grades at the desired market weight. Calves receiving premiums over British crosses were the average to good calves in the breed, not the poor calves.

An important concern to producers with calves that are discounted is whether the discounts are justified. Are the discounted calves less profitable to finish, or are feeders making a higher profit from these calves because of the lower price paid for the calves? If there are differences in profitability among calves, then what factors are primarily responsible? A study was undertaken at the Agriculture Canada Research Station at Brandon, Manitoba to determine the effect of breed on the returns from finishing calves and whether the method of pricing the finished animal (liveweight, carcass, or lean) affected returns. To do this, the study determined the price (break-even) that could be paid for feeder calves of specific breed crosses, when taking into account all costs of production and the quality of the finished animal. A high feeder calf price would be associated with a calf that was more profitable

to finish.

THE STUDY

The study was based on steers fed at the Brandon Research Station over a six year period from 1973-74 to 1978-79. The calves were three-breed cross calves from the Foreign Cattle Breed Evaluation program. Charolais (C), Simmental (S), Limousin (L), and Chianina (Chi) terminal sires were mated to Hereford-Angus (HA) dams and nine dam crosses produced by mating C, S, and L to Hereford (H), Angus (A), and Shorthorn (N). The breed crosses are shown in Table 1.

TABLE 1. Terminal sires and first-cross dams used to produce three-breed cross calves in the study.

Terminal sires	First-cross dams
C[a]	HA SH SA SN LH LA LN
S	HA CH CA CN LH LA LN
L	HA CH CA CN SH SA SN
Chi	HA CH CA CN SH SA SN LH LA LN

[a] C=Charolais, S=Simmental, L=Limousin, Chi=Chianina, H=Hereford, A=Angus, and N=Shorthorn.

Calves were weaned in October or November. The weaned calves went directly to a 28-day "warm-up" during which they were gradually introduced to an all-concentrate pelleted grain diet. The diet was fed free choice and its composition is shown in Table 2. No growth hormones or feed additives were used. The calves were penned by breed cross of dam for 3 years and by breed of terminal sire for 3 years in open front sheds with paved lots. Individual animals were weighed every 28 days until sent to slaughter. Weights during the feeding stage were taken after water was withheld overnight. Steers to be slaughtered were taken off feed and water at 4:00 PM, weighed the next morning at 6:00 AM, and hauled to a local packing plant to be slaughted that morning. Feed consumption in each pen was measured and recorded for every 28-day period. One-half of each breed cross of calf was slaughted at 13 1/2 months of age and the other half at 15 months of age. A total of 1038 steers were slaughtered over the 6 years and carcass data were obtained for each animal.

TABLE 2. Feedlot diet[a].

Ingredient	Percent of the diet by weight
Barley	50.0
Oats	30.0
Dried molasses beet pulp	15.0
Molasses	2.8
Calcium phosphate	0.5
Limestone	0.75
Urea (45% N feed grade)	0.5
Salt	0.4
Vitamin A	0.05

[a] Note this was the diet used throughout the study. It may not be the least cost diet given current grain prices.

PERFORMANCE OF THE STEERS

Liveweight, Gain, and Feed Conversion

Initial weight, 140 day, 196 day and 252 day weights for the progeny of the breed crosses are shown in Table 3. Average daily gain from the initial weight to 140, 196, and 252 days are all in the table. Average daily gains declined as liveweight increased. Feed conversion to 140, 196 and 252 days was estimated from pen feed consumption and gain, which were recorded every 28 days. Feed per unit of gain increased as liveweight increased. Average daily gains were similar for the C, S, and Chi sired

TABLE 3. Weight, average daily gain, and feed conversion for progeny of terminal sire breeds and dam crosses.

	Weight (kg)				ADG[a] (kg/day)			Feed/gain ratio		
Days	Initial	140	196	252	140	196	252	140	196	252
Breed of terminal sire[b]										
C	252	443	495	543	1.36	1.24	1.15	6.50	6.94	7.37
S	243	428	477	523	1.32	1.19	1.11	6.53	6.99	7.63
L	237	410	459	497	1.24	1.13	1.03	6.74	7.23	7.70
Chi	253	441	500	541	1.34	1.26	1.14	6.51	6.96	7.54
Breed of dam cross[b]										
HA	231	412	460	503	1.29	1.17	1.08	6.78	7.16	7.55
CH	245	433	493	525	1.35	1.27	1.11	6.43	6.98	7.57
CA	244	427	486	525	1.30	1.23	1.12	6.60	7.05	7.47
CN	254	445	495	544	1.36	1.23	1.15	6.34	6.86	7.34
SH	250	431	481	526	1.29	1.18	1.10	6.68	7.11	7.32
SA	251	430	491	524	1.27	1.22	1.08	6.65	7.10	7.62
SN	259	444	492	545	1.34	1.19	1.13	6.52	6.95	7.49
LH	244	421	488	519	1.26	1.24	1.09	6.83	7.20	7.88
LA	244	428	480	534	1.32	1.20	1.15	6.51	7.04	7.68
LN	244	440	486	531	1.40	1.23	1.14	6.24	6.76	7.71

[a] Average daily gain.
[b] The breeds are as defined in Table 1.

calves and lower for L sired calves. Feed required per unit gain for the C, S, and Chi were similar, with L higher. The calves that were 50% L grew slower and required more feed per unit of gain than did calves from the other three terminal sire breeds. Daily gain and feed conversion by breed of dam cross fell into three groupings. The dam crosses with the highest gain and lowest feed per unit gain were the CH, CN, SN, and LN. The HA, SH, SA, and LH comprised the group with the lowest growth rate and the highest feed per unit gain. The CA and LA were in a mid grouping. These dam cross groupings were similar regardless of the breed of sire of calf.

Carcass Dressing Percentages and Grades

The dressing percent and grade distribution of the carcasses are shown in Table 4. The dressing percent was highest for progeny of the L terminal sire cross and lowest for the HA dam cross. A high percent of all carcasses graded A1. Animals were slaughtered on an age basis (one-half of each breed cross group at 13 1/2 months and the other half at 15 months of age). Weight and potential finish were not considered as slaughter criteria. An age basis for slaughter was used to facilitate the slaughter schedule and differences in finishing ability of breed crosses would be more evident than if slaughtered on a finish basis. As a result, some carcasses had insufficient finish to grade in the A category and some were over finished grading A3 or A4. The majority of those grading B1 were under 450 kg (992 lb), but there were three animals which weighed over 550 kg (1212 lb) that graded B1. The Limousin terminal sire and the Here-

TABLE 4. Dressing percent and grades for progeny of terminal sire breeds and dam crosses.

	Dressing Percentage	Carcass grades (%) A1	A2	A3&A4	B1&C1
Breed of terminal sire[a]					
C	60.5	81.0	14.5	1.4	3.1
S	60.2	83.3	13.6	0.9	2.2
L	61.6	78.3	18.7	1.5	1.5
Chi	61.4	92.4	5.2	0.0	2.4
Breed of dam cross[a]					
HA	60.1	72.0	26.5	1.5	0.0
CH	60.7	83.7	11.6	1.2	3.5
CA	61.3	84.9	11.3	0.0	3.8
CN	61.4	91.6	6.0	1.2	1.2
SH	60.9	86.7	9.7	1.8	1.8
SA	60.7	82.2	13.9	0.8	3.1
SN	61.1	87.1	11.2	0.9	0.8
LH	60.7	89.6	8.1	0.0	2.3
LA	61.0	87.1	9.7	0.0	3.2
LN	61.4	85.3	9.5	1.0	4.2

[a] The breeds are as defined in Table 1.

ford-Angus dam crosses produced a higher percent of A2s. The Chianina terminal sires produced the highest percent of A1 carcasses.

THE ANALYSIS

When purchasing feeder calves, how much can you afford to pay? It will depend on the expected price of slaughter cattle, the cost of feeding and maintaining the calves, and the expected weight gain. The excess of returns over the cost of gain can be applied to the purchase price of the calf. If calves can be purchased for less than the break-even price then a profit can be made on feeding the calves. The expected returns depend on the price of slaughter cattle, the grade, and the market weight. Costs depend on feed prices, feed conversion, length of time on feed, facilities, and veterinary and medicine (including implants). The analysis determined the price that could be paid for feeder calves under three methods of pricing the slaughter animal. The three pricing methods were liveweight, dressed carcass weight, and yield of lean. There is a worksheet at the end of the report that works through the determination of the price that could be paid for a feeder calf using dressed carcass weight of the slaughter animal.

The October 1987 market prices and 1987 Manitoba Agriculture Farm Business Management costs were used. Liveweight price for A1 was $187.20/100 kg ($84.92/cwt) and the carcass price was $320/100 kg ($145.16/cwt). Grade discounts were based on the Montreal wholesale carlot prices in October 1987. Wholesale prices for primal cuts were used to determine the producer prices for lean cuts. Since cattle are not sold in Canada on a lean yield basis, producer prices for lean were derived from wholesale prices for specific cuts (loin, round, rib, brisket, chuck, flank, shank, and plate) and the average yield of lean for these cuts.

The lean cut prices were set to equate the value of an average carcass sold on a lean basis to that on a carcass basis. Feed costs were October 1987 costs for the diet in Table 2.

RESULTS

The break-even price for the three pricing methods was determined. The average break-even prices for progeny by terminal sire breed and breed cross of dam were calculated and adjusted to the same initial weight on feed and the same slaughter age. These break-even prices are reported in Table 5. When pricing slaughter animals on a liveweight basis, the break-even price that could be paid for feeder steer progeny of C, S, and Chi and of the same weight was similar and higher than what could be paid for L. These results reflect the daily gain and feed conversion in Table 3. Daily gain and feed efficiency were lowest for the L terminal sire. Selling slaughter animals on a hot carcass basis, the break-even price for Chi sired calves was higher than the C, and both were higher than S and L, which were similar. The L and Chi break-even prices were relatively higher than the S and C when based on hot carcass weight instead of liveweight because of relatively higher dressing percentages. When selling slaughter animals based on lean meat, the break-even price for Chi sired calves was higher than for the C and L, which were similar and higher than for the S sired calves. The yield of lean was lowest for the S and highest for the L sired calves. Regardless of the pricing method used for the finished steer, the price that could be paid for feeder calves of similar weight was highest for Chi followed by the C sired calves. The method of pricing did affect the S and L sired break-even calf prices with the L priced higher when based on lean yield. The S price was comparatively higher than the L when based on liveweight pricing.

The break-even price that could be paid for a feeder calf, of the same weight, also depends on the breed of dam cross. Slaughter pricing on a liveweight basis resulted in three dam groupings which matched those of daily gain and feed conversion. The CH, CN, SN, and LN have the highest break-even price and the HA, SH, SA, and LH the lowest break-even price. Pricing on a hot carcass basis resulted in the highest break-even price for CN, SN, and LN steer calves and the lowest for HA. Slaughter pricing on a lean basis resulted in the CN, and LN having the highest and HA the lowest break-even price for feeder calves of the same weight. The breed cross of dam groupings are similar irrespective of the terminal

TABLE 5. Break-even feeder price by pricing method and breed, ($/100 kg).

	Pricing method of finished steer		
	Live-weight	Hot carcass	Lean meat
Breed of terminal sire[a]			
C	260	273	271
S	257	267	263
L	246	264	268
Chi	262	280	282
Breed of dam cross[a]			
HA	251	260	252
CH	260	275	275
CA	256	273	275
CN	261	280	281
SH	254	269	271
SA	254	269	271
SN	260	277	273
LH	254	267	270
LA	257	273	274
LN	262	281	280

[a] The breeds are as defined in Table 1.

sire breed. The major effect of slaughter cattle pricing method on the dam crosses was the break-even price for HA was comparatively lower when pricing the slaughter steer by carcass or by lean yield.

The price premiums over the HA obtained in the analysis do not directly correspond to those observed in the market. This analysis would price L cross calves lower and S and Chi cross calves higher than what has been observed in the feeder calf market. Slaughter pricing on a lean basis reflected the market pricing of feeder calves better than slaughter pricing by liveweight or hot carcass weight. This may indicate that the industry is partly taking lean yield into account.

The S sired calves did better in this analysis than would be expected based on feeder calf prices. There are four possible reasons. First, S sired calves in this study were at most 50% S. The higher the percent S in the cross, the less the feeding industry is willing to pay. Percentages greater than 50 are being discounted the most. Secondly, this analysis used an all concentrate diet, while many feedlots use a silage-grain diet. (Corn silage in eastern Canada and corn and barley silage and haylage in western Canada). With the all concentrate diet fed in this study, the S crosses were able to obtain adequate finish at lower weights. Thirdly, there is variation within the S breed that may be greater than some other breeds, producing nonbeef types. The beef type S are generally not discounted, while the nonbeef types are not wanted by the feeding industry and will be purchased only if heavily discounted. This study may have had few of the nonbeef types. And fourthly, many feeders have indicated health problems and bad legs occur too often, which was not a problem in this study.

The results indicate the Chi cross calves would sell at premiums, which is contrary to what is occurring in the industry where Chi crosses generally sell at a discount to all other breed crosses ($2.25/100 kg [$5/cwt] less than straight British crosses). In this study, the Chi produced a good carcass and a very high percent of A1 grades. And as with the S crosses, the diet could have been a major factor in the grades. A diet containing silage, or hay, may have resulted in more calves having inadequate finish and grading B1. This occurrence may even be more likely for the Chi than the S, given that fewer Chi graded A2, A3, or A4. There may also be additional building and facility costs for these tall animals which were not accounted for in this analysis.

FACTORS AFFECTING FEEDER STEER PRICES

Break-even feeder calf prices were calculated for a range of carcass and feed prices, weight on feed, and average daily gain on feed to determine their effect on the break-even price. Feeder calf prices were then used to develop tables of break-even feeder calf prices (Tables 6 to 11). The break-even price for feeder calves will be higher under the following conditions: (1) higher slaughter prices, (2) lower weight on feed, (3) lower feed cost, and (4) higher average daily gain on feed.

Table 6 shows break-even feeder calf prices for different prices for the hot carcass and for feed, with initial calf weight on feed at 245 kg (540 lb) and average daily gain on feed of 1.25 kg/day (2.76 lb/day). At a carcass price of $320/100 kg ($145.16/cwt) and a feed price of $130/tonne, the break-even feeder calf price is $233/100 kg

($105.70/cwt). An additional $40/100 kg ($18.14/cwt) in the price of the carcass would allow paying an additional $46/100 kg ($20.87/cwt) for the feeder calf. An increase in the price of feed by $20/tonne would result in paying $14/100 kg ($6.35/cwt) less for the feeder calf.

TABLE 6.Break-even feeder calf prices ($/100 kg) for different carcass prices vs. feed prices[a].

Feed prices	Carcass prices ($/100 kg)				
($/tonne)	200	240	280	320	360
70	137	183	229	275	321
90	123	169	215	261	307
110	109	155	201	247	293
130	95	141	187	233	279
150	81	127	173	219	265

[a] Initial weight on feed = 245 kg; average daily gain on feed = 1.25 kg/day.

Table 7 has break-even prices for different carcass prices and initial weight on feed, with a feed cost of $90/tonne and average daily gain on feed of 1.25 kg/day (2.76 lb/day).

TABLE 7.Break-even feeder calf prices ($/100 kg) for different carcass prices vs. initial weights[a].

Initial weight	Carcass prices ($/100 kg)				
(kg)	200	240	280	320	360
195	169	215	261	307	353
220	144	190	236	282	328
245	123	169	215	261	307
270	106	152	198	244	290
295	92	138	184	230	276

[a] Feed price = $90/tonne; average daily gain on feed = 1.25 kg/day.

When the carcass price is $240/100 kg ($108.87/cwt) and the initial calf weight 270 kg (595 lb), the break-even price is $152/100 kg ($68.95/cwt). The effect of carcass price on the feeder calf price is the same as in Table 6. An additional 25 kg (55.11 lb) in feeder calf weight will reduce the feeder calf price from $14 to $25/100 kg ($6.35 to $11.34/cwt), depending on the weight of the calf.

Table 8 shows break-even feeder calf prices for different carcass prices and average daily gain on feed, with feed costs of $90/tonne and initial weight of 245 kg (540.1 lb). A carcass price of $280/100 kg ($127.01/cwt) and average daily gain of 1.05 kg/day (2.31 lb/day), will result in a break-even feeder price of $188/100 kg ($85.28/cwt). The effect of carcass price on the break-even feeder calf price is the same as in Tables 6 and 7. An increase in average daily gain on feed of .2 kg/day (.44 lb/day) will increase the break-even feeder calf price $28/100 kg ($12.70/cwt).

TABLE 8.Break-even feeder calf prices ($/100 kg) for different carcass prices vs. daily gains[a].

Average daily gain	Carcass prices ($/100 kg)				
(kg/day)	200	240	280	320	360
0.65	40	86	132	178	224
0.85	68	114	160	206	252
1.05	96	142	188	234	280
1.25	124	170	216	262	308
1.45	152	198	244	290	336

[a] Initial weight on feed = 245 kg; feed price = $90/tonne.

Table 9 contains break-even prices for different feed prices and initial weight on feed, with a carcass price of $320/100 kg ($145.16/cwt) and average daily gain of 1.25 kg/day (2.76 lb/day). With feed priced at $110/tonne and the calf weighing 245 kg (540.1 lb), the break-even calf

price is $247/100 kg ($112.04/cwt). As previously indicated, feed price increases of $20/tonne will reduce the break-even feeder calf price $14/100 kg ($6.35/cwt) and a 25 kg (55.11 lb) increase in the initial weight of the calf will reduce the break-even price from $14 to $25/100 kg ($6.35 to $11.34/cwt).

TABLE 9. Break-even feeder calf prices ($/100 kg) for different feed prices vs. initial weights[a].

Initial weight (kg)	Feed prices ($/tonne) 70	90	110	130	150
195	321	307	293	279	265
220	296	282	268	254	204
245	275	261	247	233	219
270	258	244	230	216	202
295	244	230	216	202	188

[a] Carcass price=$320/100 kg; average daily gain on feed=1.25 kg/day.

Table 10 has break-even prices for different levels of feed price and average daily gain on feed. At a feed price of $110/tonne and gains of 1.25 kg/day (2.76 lb/day), the break-even calf price is $248/100 kg ($112.50/cwt). The impacts from changes in feed price and daily gains are as previously indicated.

TABLE 10. Break-even feeder calf prices ($/100 kg) for different feed price vs. daily gains[a].

Average daily gain (kg/day)	Feed prices ($/tonne) 70	90	110	130	150
0.65	192	178	164	150	136
0.85	220	206	192	178	164
1.05	248	234	220	206	192
1.25	276	262	248	234	220
1.45	304	290	276	262	248

[a] Carcass price = $320/100 kg; initial weight = 245 kg.

Table 11 contains break-even feeder calf prices for different levels of average daily gain on feed and initial weight. At a gain of 1.05 kg/day (2.31 lb/day) and an initial weight of 220 kg (485 lb), the break-even price is $254/100 kg (115.72/cwt).

TABLE 11. Break-even feeder calf prices ($/100 kg) for different daily gains vs. initial weights[a].

Average daily gain Initial weight (kg)	(kg/day) 0.65	0.85	1.05	1.25	1.45
195	223	251	279	307	335
220	198	226	254	282	310
245	177	205	233	261	289
270	160	188	216	244	272
295	146	174	202	230	258

[a] Carcass price = $320/100 kg; feed price = $90/tonne.

INTERPRETATION OF RESULTS

The objective of the study was to determine whether feeder calf price differences by breed cross of calf are justified on an economic basis, and, if there were differences, to determine what were the major factors causing the differences. Economic bases for differences in feeder calf prices among the breed crosses were found and the causes of the differences were directly related to the performance of the calf on feed and the quality of the carcass produced. While the breeds in this study were limited to four terminal sire breeds and 10 first-cross dam types, the factors which affect the feeder calf price and the break-even prices in Tables 6 to 11 will apply to all breeds.

The economic reasons for differences in feeder calf prices by the breed cross of the calf are the result of the gain while on feed, the cost of gain, and the carcass grade and yield.

While breed cross differences were found in this study, there are also differences within breeds that may be as large as those across breeds. When selecting calves for feeding, producers should choose them on the basis of their growth and profit potential rather than on breed make-up alone.

Some breed crosses may be discounted in the market for reasons other than feedlot performance and profitability. Possible reasons for this are too few numbers to fill pens, additional costs not accounted for in this analysis, or a lack of information on the performance and profitability of the crosses.

Producers should consider selling slaughter cattle on a rail grade basis. There can be a large benefit from selling rail grade, especially if the animals have been shrunk prior to shipping and they have low amounts of tag on the hide. If slaughter cattle have high dressing percentages, then returns will generally be higher by selling on the rail.

If the grading system were to take yield of lean into account, then muscle to bone ratios of the finished animal should also be considered.

The feeding program used and the energy concentration of the diet may have to differ by breed cross of the calf for best economic results. Calves with a high percent of British breeding should be fed so as to not over finish the calves. Calves with high percentage Simmental or Chianina may require high energy diets to prevent under finishing at the optimal market weights.

WORKSHEET

The following worksheet estimates the price that could be paid for a feeder calf and cover all production costs. The column on the right and the blank spaces are provided for your estimates. The example assumed that the calf was on feed for 252 days with an initial weight of 240 kg and a final weight of 520 kg. The gains while on feed can be obtained from Table 3 and in this case an average value of 1.11 kg/day was used. The dressing percent was 59.5 and the grade was A2. Building and facility investment per calf was $110 with a life expectancy of 20 years and salvage value of $30. Machine investment per calf was $70 with a life expectancy of 10 years and a salvage value of $40.

The feed to gain (F/G) ratios can be obtained from Table 3 for different lengths of time on feed and the different breed crosses. There are F/G ratios for 140, 196 and 252 days on feed. These ratios are an average over the entire feeding period. For the worksheet, use the F/G ratio that is closest to the length of time your animals will be on feed. An average F/G ratio of 7.56 to 252 days was used in the worksheet.

A calf cost of $600 was used as an initial value to compute the cost of death losses and the interest on operating capital. Because the worksheet calculates the price that can be paid for a feeder calf and part of the costs of feeding the calf are death losses and interest expenses, you need to start with a calf value that will be close to the break-even value of the calf.

In this example, $640.86 was the maximum amount that could be paid for a 240 kg calf on feed for 252 days and with these prices and costs. The major factors that affect the price of the feeder calf are gross return from sale of the slaughter animal, daily gain, feed to gain conversion ratio, cost of feed, and interest expense on operating capital.

	$/HEAD	YOUR ESTIMATE
RETURN FROM SALE OF SLAUGHTER ANIMAL (A2)		
520.0 kg X $311.58/100 kg X 59.5 dress %	964.03	
_____ kg X $_____/100 kg X ____ dress %		_____
OPERATING COSTS		
Feed to 252d (280.0 kg gain X 7.56 F/G X $0.07/kg)	148.18	
Feed to ___d (_____ kg gain X ____ F/G X $____/kg)		_____
Bedding 1.5 kg/d X 252d X $.025/kg	9.45	_____
Vet., Medicine, Implants	10.25	_____
Building Repairs & Maintenance (2% of $110)	2.20	_____
Machine Repairs & Maintenance (5% of $70)	3.50	_____
Fuel, Electricity, Etc.	5.00	_____
Death Loss (2% of average value) $\left(\frac{964.03 + 600}{2}\right)$ X 2%	15.64	_____
Trucking	11.00	_____
Commission and Yardage	12.00	_____
SUBTOTAL	217.22	
Interest on operating capital (12%) $\left(600 \text{ X } 12\% \text{ X } \frac{252}{365}\right) + \left(\frac{217.22}{2} \text{ X } 12\% \text{ X } \frac{252}{365}\right)$	58.71	_____
TOTAL OPERATING COSTS	275.93	
FIXED COSTS		
Depreciation Buildings (110-30)/20	4.00	_____
Depreciation Machinery (70-40)/10	3.00	_____
Interest on Investment (8%) $\left[\left(\frac{110 + 30}{2}\right) + \left(\frac{70 + 40}{2}\right)\right]$ X 8%	10.00	_____
TOTAL OPERATING AND FIXED COSTS	292.93	_____
LABOUR COSTS		
.015 hours/d X $8/hour X 252d	30.24	_____
TOTAL OPERATING, FIXED, AND LABOUR COSTS	323.17	
RETURNS OVER TOTAL COSTS (964.03 - 323.17)	640.86	_____
BREAK-EVEN PURCHASE PRICE FOR 240 kg CALF (640.86 ÷ 240)	2.67	_____

METRIC SYSTEM CONVERSIONS

When you know	Multiply by	To find
kilogram (kg)	2.20	pound (lb)
$/100 kg	0.454	$/hundred weight ($/cwt)